

## IN THE CLAIMS:

1. (Currently Amended) A method for providing high connectivity communication over a Time Division Multiplexed (TDM) and Wavelength Division Multiplexed (WDM) packet-switched optical ring network having a plurality of nodes connected thereto comprising the steps of:

creating, at node A one of said plurality of nodes, a composite packet;

~~dropping from said network, at said node A, a composite packet that is being routed over said packet-switched optical ring network destined for said node A one of a plurality of nodes of said packet-switched optical ring network from said packet-switched optical ring network;~~

adding into said network said composite packet created by said step of creating one of said plurality of nodes into ~~said packet-switched optical ring network~~; and

routing over said network said composite packet added into said network by said step of adding to a destination node.

2. (Currently Amended) The method according to claim 1 where said step of adding adds said composite packet into ~~A method for providing high connectivity communication over a Time Division Multiplexed (TDM) and Wavelength Division Multiplexed (WDM) packet-switched optical ring network having a plurality of nodes connected thereto comprising the steps of:~~

~~creating, at one of said plurality of nodes, a composite packet;~~

~~dropping a composite packet being routed over said packet-switched optical ring network destined for said one of a plurality of nodes of said packet-switched optical ring network from said packet-switched optical ring network;~~

~~adding to an empty photonic time slot of said network said composite packet created by said one of said plurality of nodes into said packet-switched optical ring network; and~~

~~routing said photonic time slot comprising said composite packet to a destination node.~~

3. (Cancel) The method according to claim 1, ~~wherein said composite packet comprises an entire packet~~ further comprising the step of decomposing the dropped composite packet into its constituent packets.

4. (Cancel) The method according to claim 1, further comprising the step of decomposing the dropped composite packet into a partial composite packet that contains some of the packets constituting the dropped composite packet, and a set of remaining ones of the packets constituting the dropped composite packet ~~wherein said composite packet comprises a portion of an entire packet.~~

5. (Currently Amended) The method according to claim 1, wherein said creating step further comprises the steps of:

serially generating a plurality of packets, each packet being generated at a different wavelength; and

stacking said plurality of packets to form said composite packet.

6. (Original) The method according to claim 1, wherein said packet-switched optical ring network is a point-to-point network.

7. (Currently Amended) The method according to claim 1, where said step of dropping takes place by operation of a control signal at an optical switch of said node A ~~further comprising the steps of bypassing said composite packet at a given node depending upon.~~

8. (Currently Amended) The method according to claim 1, wherein said dropped composite packet ~~destined for said one of said plurality of nodes of said composite packet-switched optical ring network~~ is further distributed to a plurality of user sites connected to said one of said plurality of nodes by using ~~wavelength Division Multiplexing (WDM)~~ techniques according to said constituent wavelengths of said composite packet.

9. (Currently Amended) The method according to claim 1, wherein said dropped composite packet is dropped by said step of dropping from a photonic time slot destined for said one of said plurality of nodes of said packet-switched optical ring network is further detected in parallel.

10. (Currently Amended) The method according to claim 8, wherein said WDM techniques employ a wavelength not matching a wavelength of a fiber Bragg grating (FBG) bypasses the node transparently.

11. (Currently Amended) The method according to claim 1, where said dropping a composite packet occurs during a time slot, and said adding the composite packet created by said step of creating occurs during said time slot further comprising the step of adding "thru" composite packets in said photonic time slot to composite packets created at said one of said plurality of nodes.

12. (Currently Amended) The method according to claim 1 further comprising the step of unstacking the composite packet dropped by said step of dropping to form a set of individual packets, each at its own wavelength 8, wherein said composite packet destined for said one of said plurality of nodes is recovered and re-serialized into individual packets.

13. (Currently Amended) The method according to claim 12 where the set of individual packets simultaneously appear over a set of outputs<sup>9</sup>, wherein said composite packet destined for said one of said plurality of nodes is recovered and re-serialized into individual packets.

14. (Currently Amended) The method of claim 12 where the packet of the set of individual packets appear sequentially in time. A method for providing high-connectivity communication over a packet-switched optical ring network having a plurality of nodes connected thereto comprising the steps of:  
—creating, at one of said plurality of nodes, a composite packet;

~~dropping a composite packet in a photonic time slot being routed over said packet-switched optical ring network destined to said one of a plurality of nodes of said packet-switched optical ring network from said packet-switched optical ring network;~~  
~~simultaneously adding to said photonic time slot said composite packet created by said one of said plurality of nodes into said packet-switched optical ring network; and~~  
~~routing said photonic time slot comprising said composite packet to a destination node.~~

15. (Currently Amended) The method according to claim 1 where said creating a composite packet comprises the steps of:

accepting a set of packets  $P_i$  arriving at times  $T+iD$ , where index  $i=0,1,2,\dots,N$  and applying to each packet  $P_i$ ,  $i=0,1,2,\dots,N$ , a delay of  $(N-i)D$ , to obtain thereby delayed packets; and

combining the delayed packets to form said composite packet 14, wherein a wavelength not matching a wavelength fiber Bragg grating (FBG) passes through the node transparently.

16. (Currently Amended) A method for providing high connectivity communication over a packet-switched optical ring network having a plurality of nodes connected thereto comprising the steps, at one of said plurality of nodes, of:

creating, at one of said plurality of nodes, a composite packet;

(a) dropping from said ring network, in a photonic time slot, a composite packet in a photonic time slot being routed over said packet-switched optical ring network destined to said one of a plurality of nodes of said packet-switched optical ring network from said packet-switched optical ring network;

(b) at least partially unstacking the dropped composite packet to develop one or more sets of packet signals, or developing a partial composite packet that contains said one or more sets of packet signals;

(c) creating a composite packet from said one or more sets of packet signals or said partial composite packet, added to other packets; and

~~(d) adding the created to said photonic time slot said composite packet created by said one of said plurality of nodes into said packet-switched optical to said ring network; and~~  
~~routing said photonic time slot comprising said composite packet to a destination node.~~

17. (New) The method of claim 16 where said steps (a) and (b) are carried out by employing a plurality of fiber Bragg grating elements

18. (New) The method of claim 17 where at least some of said fiber Bragg grating elements are tunable.

19. (New) A method for communicating information in a network comprising the steps of:

carrying over said network composite photonic packets, each of which occupies a time slots and a given set of wavelengths;

in an information-handling module of a node of said network, transforming information between non-composite packets and composite packets by use of a stacking technique, or an unstacking technique, or both; and

coupling composite packets between said network and information handling module of said node.